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Intelligence Report

Civil Defense in the Soviet Union

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CENTRAL INTELLIGENCE AGENCY
Directorate of Intelligence
15 May 1969

INTELLIGENCE REPORT

Civil Defense in the Soviet Union

Summary

Soviet political and military leaders at the 23rd Party Congress in 1966 reaffirmed their belief in the importance of a vigorous civil defense program. Since then, there has been a general rise in the level of civil defense activity in the Soviet Union.

In part the renewed emphasis reflects a conviction that a strong civil defense posture would help the USSR survive a nuclear war, but beyond that it also serves as a means for instilling a greater degree of patriotism and discipline in the populace. The regime's growing concern over the danger of liberal influences has stimulated increased reliance on paramilitary-type programs for large-scale indoctrination.

No other country has informed its people as thoroughly on the effects of nuclear, biological, and chemical weapons. Soviet citizens now are engaged in the sixth compulsory civil defense instruction program since 1955, and civil defense has become a required subject in elementary and secondary schools throughout the country. Workers are also participating in compulsory training. An extensive network of staff schools trains leaders for civil defense duties. The effect of all this indoctrination cannot be measured, but its pervasiveness has probably conditioned most of the populace to follow orders and take self-help measures in an emergency.

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The Soviet military has an important role in civil defense. Military officers supervise the program, and in wartime civil defense operations involving millions of civilian workers would come under military control. In addition, the Soviets maintain a number of military civil defense units, and a three-year school was established in March 1967 to train junior officers in civil defense specialties.

The Soviet concept of civil defense calls for mass evacuation of urban areas before an attack, because blast-resistant shelter is scarce and is considered too expensive to build on a large scale. This concept presupposes adequate advance warning during a period of rising tension or non-nuclear war. Some key personnel would remain in place, however, to maintain essential services, and Soviet civil defense officials have claimed that some hardened shelters are provided for them.

The evacuees would disperse into the countryside by every means of transport available. Extensive plans have been made to handle the logistics of this operation but the feasibility of an expeditious evacuation remains questionable. Transportation could be a particularly acute problem because of competing military needs and inadequate facilities.

Even if the urban dwellers were successfully evacuated, the problems of providing fallout shelter, food, and medical services for them would remain. Soviet civil defense literature devotes much attention to techniques for building earth-covered trenches, suggesting that the Soviets intend to rely heavily on this kind of last-minute preparation. There is little evidence that materials have been stockpiled in the countryside for shelter construction or for other essential services to the evacuees.

A decision to evacuate cities before an attack would cause enormous disruption and could have an unpredictable psychological effect on the population. Soviet leaders might consider a capability for evacuating cities as a useful option for demonstrating their resolve short of hostile action in a crisis situation. On the other hand, evacuation during a period of rising international tension would have provocative overtones.

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Soviet Philosophy of Civil Defense

Civil defense in the USSR is quite different in concept and execution from civil defense in the US. The coercive nature of the Soviet political system facilitates mass participation and makes it possible for the leadership to use civil defense as an instrument of indoctrination.

It has become especially clear since the 23rd Party Congress in 1966 that the Soviets consider civil defense training to have considerable utility beyond its express purpose of helping the USSR survive a nuclear war. Political and military leaders at the Congress strongly endorsed civil defense and also expressed concern over the susceptibility of the population, and mainly youth, to ideological subversion and bourgeois influences.

Such political-sociological motives increasingly have come to underlie large-scale public participation in such activities as compulsory civil defense and pre-induction military training. The fact that the leadership sees an indoctrinational spinoff to be derived from these programs will probably assure their continuation regardless of their military significance.

Public civil defense training and the pre-induction military training that is required of all high school students are now integral aspects of the Soviet "military-patriotic education" process. These activities constantly emphasize the need for discipline. Another theme they stress is the threat of a major war in which the US and its allies would not hesitate to use nuclear, chemical, and biological weapons against the Soviet populace. The unanimity of purpose shared by the people, the party, and the armed forces is also emphasized.

Military considerations nevertheless remain the primary motives behind Soviet civil defense preparations. In addition to minimizing casualties, a principal objective of Soviet civil defense is to prevent a complete collapse of public morale, government control, and economic output in wartime. These are factors that would have a special significance in

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a protracted war in which the military's ability to continue would depend on popular support and a continuous flow of resources.

One of the purposes of civil defense indoctrination and propaganda, for example, is to condition the population to remain orderly in a wartime situation. Civil defense indoctrination serves to reduce the possibility of panic by giving reassurance that defense against modern weapons is feasible. To this extent it could enhance the government's ability to maintain order in wartime.

A primary purpose of compulsory civil defense training for workers is to prepare them for an active role in restoring the economy after an attack. Workers in important industries are among those few for whom blast shelters are reserved or planned. They are expected to stay on the job as long as possible up to an attack, and to begin reclamation work as soon as possible afterward.

The military significance of Soviet civil defense is also apparent in the attention some military theorists give it in classified and unclassified publications. It is further demonstrated by the fact that military officers supervise the civil defense program and that in wartime civil defense operations involving millions of civilian workers will come under military control.

Organization

The Soviet civil defense effort is directed by a military-civilian organization headed by Marshal of the Soviet Union V. I. Chuykov. Leaders of the various levels of government--republics, oblasts, city subdivisions, and rural townships--are the responsible peacetime heads of civil defense in their jurisdictions. So are the managers and directors of enterprises, schools, farms, and other institutions. In wartime, an assistant commander for civil defense attached to each of the military district headquarters would assume operational control of civil defense forces.

A professional civil defense staff is assigned to each economic organization and political subdivision and to each of the 15 military district headquarters. Civil defense staffs are responsible for planning and implementing civil defense measures and for training.

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Most, if not all, of the higher level staff personnel are military officers on active duty. Staff officers assigned to economic organizations and to some of the less important seats of government appear to be civilians. In many cases they are retired or reserve military officers. In the more industrialized oblasts, republic capitals, other important cities, and the military district headquarters, civil defense chiefs of staff and their immediate subordinates are senior military officers.

Sixteen general officers thus far have been identified in civil defense staff capacities. With the exception of Marshal Chuykov and his deputy, Colonel General Tolstikov, little is known of the caliber or professional background of the military officers serving in the civil defense organization.

Military officers assigned to civil defense come from the various branches of the armed forces. US attaches who visited the Soviet civil defense headquarters in January observed that among the personnel employed there were field-grade medical, engineering, artillery, air force, navy, and motorized rifle officers.

In addition to civilian civil defense formations, the Soviets maintain an unknown number of military civil defense units. These units are of three types --mechanized, radiation, and chemical. In wartime they would probably coordinate the operations of civilian formations and handle specialized functions such as monitoring for radiation and performing decontamination. They would probably also assist in securing or reconstructing especially important military and civilian installations. The Soviet press has indicated that military civil defense troops are armed and are responsible for combating enemy paratroopers dropped in rear areas.

The Soviets may be expanding the size of these military civil defense forces. According to a rumor that circulated early in 1968 among the military attaches in Moscow, three divisions of civil defense troops have been created.

The rumor has yet to be confirmed or disproved. The recent establishment of a three-year civil defense school for junior officer candidates, however, gives it some plausibility. In the publicity the school has

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received in the press, students enrolled there have been referred to as "future commanders" of mechanized, chemical, and antiradiation civil defense units. A motor vehicle and tank driving course and a chemical proving ground are being built as part of the school's facilities. As to the strength of military civil defense units, the press has referred only to units of less than regimental size.

Funding

There is no confident estimate of how much the Soviets are spending for civil defense. Civil defense expenditures are accounted for in the all-union, republic, and local government budgets as well as in appropriations to the Ministry of Defense and other ministries. Civil defense expenditures by enterprises and local governments are reimbursed in part by the parent ministries and appropriate higher levels of government, but it is not known to what extent.

An estimate of Soviet civil defense expenditures would necessarily entail more than a calculation of direct outlays for such items as shelter construction and gas masks. It would have to involve numerous indirect costs as well. Included in this category would be compensated time off for attendance at training exercises and lectures. It would also include the expenses involved in the use of factory and school facilities for training and in modifying subways and other underground installations for shelter purposes.

The magnitude of the Soviet effort suggests, nevertheless, that on a per capita basis the USSR is probably spending considerably more for civil defense annually than any other major power. Moreover, the Soviets have apparently boosted their commitment of resources to civil defense in the past two years. This is evident in the increased emphasis on civil defense in the mass media, the opening of a new military civil defense school, and the introduction of training in grade schools and high schools on a national scale. It is also apparent in recent indications that the Soviets may be building some shelters and increasing their supply of civil defense protective equipment. Their civil defense expenditures, however, are probably quite modest in comparison with their outlays for strategic offensive and defensive weapons systems.

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Training and Indoctrination

Public Training

No other society of a major power has been more indoctrinated in the effects of nuclear, chemical, and biological weapons than that of the USSR. The bulk of the Soviet public is presently taking the sixth compulsory program of civil defense instruction since 1955. Civil defense training is included in the elementary and secondary school curricula. In higher educational institutions, especially technical ones, the training is tailored to the vocation or "major" that a student is pursuing. Summer youth camps also include civil defense training and exercises as well as other paramilitary activities in their programs.

Adults are trained at their place of work, whether in agriculture or industry. Their training is intended to equip them to help themselves as well as to serve in operational units. The emphasis is on practical exercises with an aim toward organizing most of the working population into a multimillion-man rescue and recovery force. Formerly, about ten percent of the labor force of an enterprise was designated for service in civil defense units. The present training program calls for preparing all the employees of an enterprise for this service. The pressures that can be exerted by employers and by party and trade union activists help assure the participation of workers in civil defense training.

Civil defense instruction was introduced into elementary schools on a nationwide basis in 1967. As statistics from one area show, this involved a considerable effort. Some 3,000 sixth- and seventh-grade teachers in Perm Oblast attended special courses, probably of one to two weeks' duration, which qualified them as civil defense instructors. In January 1968 compulsory premilitary training, which includes civil defense instruction, was initiated in secondary schools. This program, according to Education Minister Prokofyev, required the establishment of a new post at some 36,000 secondary schools.

Besides formal training, the Soviets increasingly have made use of public communications media to inform the population about the hazards of modern weapons and about protective measures against them. In the past

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three years the volume of civil defense propaganda has risen noticeably. Civil defense articles, once confined mainly to civil defense and military publications, now frequently appear in party and government newspapers throughout the country. The number of radio and television programs on civil defense procedures has also increased. Even movie theaters are under instructions to show training films as trailers to main features.

There is no way to gauge, other than in general terms, the effectiveness of civil defense training in the USSR. Some reports suggest that training still meets with public indifference. Others indicate that it has had an undesirable effect, because instructors emphasize the awesome destructiveness of nuclear weapons rather than the feasibility of protection against them. Periodically Marshal Chuykov publicly cites various locales, farms, and factories where training is less than satisfactory.

Despite the reported shortcomings, however, the training programs have probably achieved some measure of success--if only by sheer weight of repetition and the fact that attendance is mandatory. The discipline and awareness of emergency procedures acquired by the Soviet population could reduce casualties in a nuclear war and help the government control the population.

Staff Training

The Soviets operate an extensive network of staff schools for civil defense training. These schools are attended by party and government officials, school-teachers, and executives and selected personnel from enterprises and farms. They offer courses of one or two weeks' duration to indoctrinate civilian leaders in their civil defense responsibilities and to train specialists and instructors for the civil defense system. There now are probably over a hundred of these schools located in republic capitals and oblast and rayon centers throughout the country.

The Soviets also operate two civil defense schools for military personnel, both in Moscow. One is a three-year school, opened in March 1967, which offers programs leading to junior officer commissions in chemical, communications, and engineering specialties. Its graduates--the first of whom are due out in 1970--will be assigned to junior staff positions at the various civil defense

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headquarters or to command of civil defense units. Graduates of this institution are also eligible to attend any of the other Soviet military academies.

The other military civil defense school is for senior officers. It has been in existence for 35 years. Its alumni probably are assigned as senior staff officers to civil defense headquarters at the various levels of government or the military district headquarters. This institution was located in Lenin-grad before it moved to Moscow and has been attended by civil defense officials from the East European Communist countries.

Operational Aspects

The Role of Warning

Sufficient warning time is the key to the effectiveness with which Soviet civil defense could minimize casualties in a nuclear war. Blast-resistant shelter is generally not available, and evacuation, a time-consuming process, is presently the principal civil defense measure contemplated for protecting the majority of urban dwellers from the immediate effects of nuclear attack. Soviet civil defense plans are thus based on an assumption that a general nuclear war would be preceded by a period of international tension or by conventional or limited nuclear conflict that would allow time to begin evacuation and other civil defense measures.

One example of writings by Soviet military theorists on this subject appeared in the February 1967 issue of
The author

is an advocate of a more flexible strategy for the USSR that would put less dependence on nuclear weapons alone. argued that the increased possibility of forewarning was one of the benefits of such a strategy. He theorized that the use of non-nuclear weapons at the outset of hostilities would give a country time to mobilize its armed forces and economy for the nuclear phase.

It is questionable, however, whether the Soviets would take optimum advantage of the forewarning provided by an international crisis or by limited con-

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ventional conflict. The evacuation of major cities in a period of tension, if detected, could be construed as an escalatory step. It is also an expensive and disruptive operation that the Soviets would probably be reluctant to order unless warning were unmistakable.

On the other hand, Soviet leaders might consider urban evacuation as a valuable option to exercise in a crisis confrontation, because it would enable them to demonstrate determination without initiating hostilities--and of course to save lives if attacks on cities ensued.

With the notable exception of Moscow and Leningrad, and perhaps other cities with foreign consulates, it is possible that the Soviets could evacuate some urban areas without immediate detection. A ban in June 1968 restricted travel by foreigners within the USSR for about two weeks and demonstrated that the Soviets could effectively shield most of the country from foreign observation.

Evacuation and Dispersal

The Soviet plans to relocate most city dwellers if there is sufficient forewarning of an attack date from the early 1960s. According to Marshal Chuykov, evacuation and dispersal measures would affect "on the average" 80 to 90 percent of the urban population.

Committees for coordinating and planning evacuation and dispersal have been set up in enterprises and city government offices. Procedures have been worked out for documenting evacuees. Gathering points for evacuation and destinations outside cities have been designated. The rural population is under instructions to receive and quarter evacuees, and reception committees are being organized to make arrangements for feeding, medical assistance, and useful employment.

Among those scheduled for evacuation are such non-essential city residents as old people, children, hospital patients who can be moved, and the employees of organizations that would cease operating in wartime. They would be resettled in small towns and settlements and on state and collective farms. Every available means of transport--trucks, buses, trains, and river and sea vessels--would be used.

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Dispersal would affect off-duty personnel of key industries and important organizations that would continue operating in wartime. They would be moved to locations not too distant so that, if no attack occurs, they could relieve their coworkers who are on shift. If an attack did ensue they would begin rescue and restoration work as soon as radiation levels permit. Workers who remain in potential target areas would be protected in blast shelters, but as Marshal Chuykov has recently implied, there is a shortage of such facilities for these people.

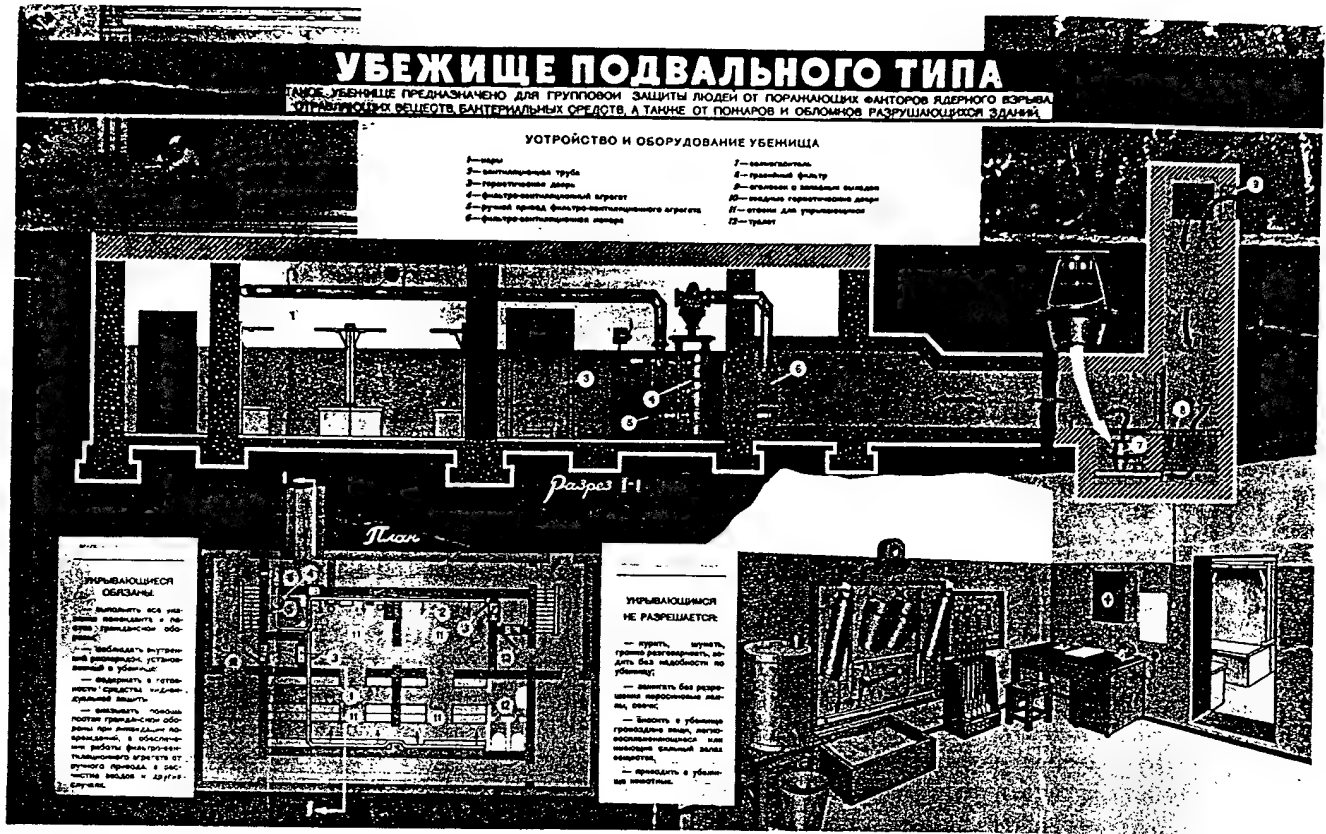
A number of factors make it questionable whether large Soviet cities could be evacuated expeditiously. Chuykov recently asserted that the Soviet transportation system and the USSR's territorial expanses make it possible to evacuate "on short notice." There is no evidence of recent city-wide evacuation exercises, however, that would demonstrate such a capability. The Soviets did gain valuable evacuation experience in World War II, but timing was a less critical factor then.

Despite Chuykov's optimism, transportation could be a serious problem in a large-scale evacuation attempt. The military practice of requisitioning vehicles in mobilization periods might cause a shortage of trucks for evacuation in some locales. A more critical factor in evacuating large cities, however, could be the competition between civil defense and priority military traffic for available road and rail space. Poor road conditions and the limited number of routes leading out of some major cities could put a serious constraint on the number of vehicles that could be used effectively for evacuation.

The ability to arrange mass feeding is another factor that would affect the success of evacuation. Chuykov has admitted that supplying evacuees with food and water is the "main problem" connected with evacuation. To alleviate this problem, he has recommended that food warehouses and processing plants no longer be concentrated in cities and that most of these facilities be relocated to farm areas where the bulk of the evacuated population would be distributed. There is no indication of how seriously planning authorities take his proposals.

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SOVIET POSTER DEPICTING LAYOUT OF BASEMENT SHELTER

Shelters of this kind were included in many new apartment houses built during the 1950s. They were designed to offer protection against fire, fallout radiation, and chemical and biological warfare agents. They would provide some moderate blast protection since they were built to withstand the collapse of the buildings overhead.

The two sections of text at the bottom of the poster spell out rules of behavior to be observed while in the shelter.

The legend at the top translates as follows:

1. Bunks
2. Ventilation Pipe
3. Airtight Doors
4. Filter-Ventilating Unit
5. Emergency Hand-drive Attachment
6. Ventilation Intake
7. Blastwave Suppressor
8. Gravel Filter
9. Emergency Escape Exit
10. Airtight Entrances
11. Benches
12. Toilets

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Shelter

During the 1950s the Soviets built basement-type shelters extensively, but there is little evidence that this practice continued on a large scale beyond 1958. Soviet civil defense manuals as recently as 1966 claim that the most common kind of shelter in the USSR is the basement type.

The USSR probably has enough potential fallout shelter space for most of the urban population in the basements of masonry multistory apartment houses in cities and city-type workers settlements. These basements could afford shielding from fallout radiation with a protection factor of 40 to 100* but would give only limited protection against blast effects. According to Soviet standards, basements designed to serve as shelters would withstand the weight of the building superstructure if it were to collapse. Ordinary basements, however, would probably sustain only a low blast overpressure.

Because of their relatively low blast resistance and their location in urban-industrial--and therefore likely target--areas, basement fallout shelters would have little value. The increased emphasis on urban evacuation since the early 1960s shows that Soviet civil defense planners are aware of the limitation.

Even if urban dwellers were successfully evacuated, it is questionable whether the Soviets would be able to provide them timely and adequate fallout protection once they arrived at their dispersal areas. The plan is to adapt the basements of buildings in small towns, mine shafts, and the numerous vegetable storage cellars found in farming areas for such shelter. Where there are shortages of adaptable space, earth-covered trenches would be built. The amount of attention that training manuals and exercises devote to the techniques of

* *Protection factor (PF) is the ratio of the intensity of fallout gamma radiation outside a shelter to that within. For example, the radiation level inside a shelter with a PF of 40 would be 1/40 the intensity of radiation outside. Public fallout shelters in the US must have a minimum PF of 40.*

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SOVIET TRAINING POSTER DEPICTING TECHNIQUES FOR BUILDING FIELD-TYPE FALLOUT SHELTERS

The Soviets claim that shelters of this type built with the use of timber or vegetation can provide adequate fallout protection for 10 to 40 people. Estimated construction time is 90 to 170 man-hours. Dimensions on the drawings are in centimeters.

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building these emergency shelters indicates that a significant shortage of suitable protective space is anticipated.

Moreover, the Soviets apparently intend to rely heavily upon last-minute preparations to provide improvised shelters. Work to adapt potential shelter space or build field-type shelters would not start until the government declares a "Special Period." This is a state of alert that would also signal the beginning of evacuation. Success in sheltering evacuees, therefore, will depend not only on adequate forewarning and transportation, but also on the time of year and the availability of materials, able-bodied personnel, and some light construction equipment.

There is little evidence that materials have been stockpiled in the countryside for shelter purposes. Moreover, the Soviets seem to have given little consideration to the seasonal ground conditions that could affect their ability to build emergency shelters quickly.

Shortcomings in this area apparently are serious enough to warrant periodic criticisms from top-level civil defense officials. Marshal Chuykov, for instance, recently called for remedial action by urging that some initial shelter preparations in the countryside begin now. He also recommended that shelter requirements for evacuees be taken into consideration in new construction in rural areas. It is not known to what degree this recommendation is being implemented.

On a number of recent occasions Soviet civil defense officials have stated that blast-resistant shelters are being built for workers and other personnel who will stay in evacuated areas. These statements mark a departure from the usual official Soviet reticence concerning such projects. The Soviets have also acknowledged, however, that it is economically infeasible to provide the entire urban population with blast shelter.

Whatever shelters the Soviets may now be building are probably reserved for key personnel. According to Chuykov, this is a significant part of the population. In the January 1969 issue of the popular science monthly *Science and Life*, the Soviet civil

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defense chief claimed that "tens of millions of people" will remain in the cities after evacuation and dispersal measures are carried out. These "tens of millions," he stated, will be the people employed in defense industries, transportation, the power system, communications, and other important enterprises. It is necessary, he added, to provide shelter for them in the immediate vicinity of their work.

Some of the new shelter for these people may be dual-purpose structures with functional roles in peacetime. Chuykov suggested that a way to cut the cost of meeting shelter requirements for key personnel would be to build garages, theaters, restaurants, and other service enterprises underground so that they could be used as shelters.

The Soviets intend to use subways to help meet the requirement for heavy, reliable shelter for personnel who will not be evacuated. Blast doors are installed in recently opened stations of the Moscow and Tbilisi subways. They are also probably to be incorporated in current subway construction and expansion in Leningrad, Kiev, and Baku and in the systems planned for Kharkov and Tashkent.

With the exception of subways, however, the practice of building dual-purpose facilities does not appear to be widespread. A Soviet shelter expert, Yuriy Kammerer, complained about this situation in a recent issue of a Soviet construction magazine. According to his article, several experimental underground garages were constructed recently in Moscow, but nothing has been done to exploit the experience gained.

Protective Equipment

The Soviets may have stepped up the procurement of protective equipment for civil defense personnel as well as for the general population. Although they continue to extol the life-saving qualities of homemade gauze face masks, and rubberized raincoats, capes, and boots, high-level civil defense officials have recently indicated that production of such items as gas masks has been increased to meet growing requirements. These officials report that such equipment is being used increasingly in practical exercises and stress the necessity of supplying the whole population with devices to protect them against chemical, biological, and radioactive contaminants.

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In *The CPSU on the Necessity of Improving Civil Defense*, published in 1967, Col. Gen. Tolstikov noted: "The main method of training workers, employees, and collective farmers is group practical exercises in which the appropriate equipment, instruments, and devices of protection must be widely used." Tolstikov, who is First Deputy Chief of Civil Defense, went on to emphasize that one of the responsibilities of civil defense is to provide the population with individual instruments of protection. He stated that industry is producing this equipment, and warned against underestimating its life-saving potential.

Marshal Chuykov and another of his deputies, Lt. Gen. Shuvyrin, have also been emphatic on the need to provide items like gas masks. Chuykov, in his recent publication *Civil Defense in Rocket-Nuclear War*, stated that it is "mandatory" to equip the population, including evacuees and people in shelters, with individual protective equipment. In an editorial in the October 1968 issue of *Military Knowledge*, joint monthly organ of the paramilitary youth and civil defense organizations, Shuvyrin cited the special role this equipment plays in protecting people. He claimed that modern protective devices for all age levels of the population are in production. He alluded to four models of gas masks designed for children and adults.

Military Implications

With adequate forewarning, Soviet pre-attack evacuation might reduce casualties significantly if evacuees were provided adequate fallout shelter. There are, however, no civil defense measures now in effect that would prevent major damage from a nuclear attack on Soviet cities and industry. The cost of hardening cities and industrial facilities to increase their survivability would be prohibitive.

Soviet civil defense officials have recommended a number of measures to minimize damage to industry, but it is apparent from the tone and repetition of the recommendations that economic planners are not always or fully receptive. Civil defense chief Chuykov, for instance, has frequently proposed that "scientifically approved engineering-technical measures should

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be included" in new and renovated plant facilities to minimize war damage by reducing fires and explosions. He has estimated, however, that these measures could reduce the consequences of a nuclear attack by only about "five to ten percent." He did not specify the magnitude of the attack or the level of damage on which he based this calculation.

Soviet officials have not alluded to any interdependence between civil defense and ABM defense in the USSR. Furthermore, the Moscow ABM system has had no visible impact on local civil defense preparations. As far as is known, evacuation measures will apply to the population of Moscow even though the city has some antimissile sites deployed around it.

Since at least 1966 most major statements and articles on civil defense have been prefaced with the remark that there is "no guarantee that some of the enemy's weapons will not reach their targets." Such admissions may be intended to counteract earlier exaggerations by the Soviets concerning their ABM capabilities. These exaggerations may have had an undermining effect on the rationale for massive, compulsory civil defense training.

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